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EXAMINER	
YANG, NELSON C	
ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,912	FOLLONIER ET AL.	
	Examiner	Art Unit	
	Nelson Yang	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39,41-47,49-53 and 55-60* is/are pending in the application.

4a) Of the above claim(s) *34-39,41-47 and 49-53* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/17/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment of claims 1-38, 43-45, 47, 50, 53, is acknowledged and has been entered.

2. Applicant's addition of claim 55-60 is acknowledged and has been entered.

3. Applicant's cancellation of claims 40, 48, 54 is acknowledged and has been entered.

4. Claims 1-33, 34-39, 41-47, 49-53, 55-60 are currently pending

5. Claims 34-39, 41-47, 49-53 have been withdrawn.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-33, 55-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. With respect to claim 1, 13, 55, 56 it is unclear if applicant is claiming a fluid contained within the tube, or just that the tube is capable of guiding light within a fluid in the tube, if present.

Furthermore, with respect to the same claims, it is unclear if limitation means that there may be a light guiding device within the fluid, or that fluid is guided through the fluid itself. It should be noted that no support in the specification could be found for the limitation of guiding

light within a fluid contained within the tube, and therefore, the broadest reasonable interpretation has been given to the limitation, such that it would encompass either embodiment.

9. With respect to claims 2, 24, it is unclear how the fluid and sample are different from each other. More specifically, applicants originally appeared to refer to the sample as a "fluid sample"; but are currently distinguishing the sample from the fluid, rendering the claim ambiguous. In particular, it is unclear if there is a fluid separate from the sample. From the amended claims it appears they are separate, yet support in the specification could not be found for a fluid independent of the sample.

10. With respect to claim 6, 28, it is unclear if the limitation that the tube comprises one or more layers is actually required, as applicant has recited that the layers are optional.

11. The remaining claims are indefinite due to their dependence on an indefinite claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 1, 13, 55, 56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More specifically, while support could be found for light going through the measuring cell itself (p.6, para. 1), support for the limitation that the tube is capable of guiding

light within a fluid contained therein could not be found. It is unclear if this limitation is referring to some actual structural feature in the specification that would render the measuring cell capable of performing the limitation, and if so, where this feature may be found.

13. Claims 2, 24, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More specifically, it is unclear how the fluid and sample are different from each other. More specifically, applicants originally appeared to refer to the sample as a "fluid sample"; but are currently distinguishing the sample from the fluid in the amended claims. In particular, it is unclear if there is a fluid separate from the sample. From the amended claims it appears they are separate, yet support in the specification could not be found for a fluid independent of the sample.

14. Claims 8, 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Support in the specification could not be found for a tube that is a fluid core waveguide.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. Claims 1-6, 9, 11-18, 21, 24-28, 30, 32, 33, 55-58, 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Bohnenkamp [US 6,252,657].

With respect to claim 1, Bohnenkamp teaches a light guiding device such as a capillary (column 2, lines 50-55) with a first and second opening (the ends of the capillary tube, see fig. 1) wherein analytes are fixed on the inner surface of the capillary (column 1, lines 49-55), such as avidin (column 3, lines 9-10) for binding to biotin coated microbeads (column 3, lines 11-15).

The limitation wherein the inner surface of the at least one tube is exposed to said sample by loading said sample through the first opening into said at least one tube is considered to be a process claim. Since the invention of Bohnenkamp is capable of performing this step (Bohnenkamp discloses that the capillary is used as a concentrating unit for investigations into dissolved solutions (column 2, lines 65-67), the limitation is therefore anticipated.

17. With respect to claim 2, the sample may be a dissolved solution (column 2, lines 65-67).

18. With respect to claims 3, 4, the light guiding device is a capillary (column 2, lines 50-55) and would therefore be capable of capillary action. Furthermore, the flow in the capillary is also capable of being regulated by gravity. Therefore, the light guiding device of Bohnenkamp would anticipated this claim.

19. With respect to claim 5, the capillary is designed such that light is guided through and transmitted through the end of the capillary (fig. 1, column 3, lines 49-60).

20. With respect to claim 6, Bohnenkamp teaches an aviding coated capillaries (column 3, lines 9-10).

21. With respect to claim 9, analytes are fixed on the inner surface of the capillary (column 1, lines 49-55).

22. With respect to claim 11, Bohnenkamp teaches that the excess of binding areas is covered with inert protein (to prevent nonspecific binding, column 3, lines 15-20).

23. With respect to claim 12, Bohnenkamp teaches fluorescent dyes bound to biotinylated microbeads that bind to the avidin coating (column 3, lines 9-20), which would result in fluorescent light exiting the light guiding capillary (column 3, lines 60-65).

24. With respect to claim 13, Bohnenkamp teaches a light guiding device such as a capillary (column 2, lines 50-55) wherein analytes are fixed on the inner surface of the capillary (column 1, lines 49-55), such as avidin (column 3, lines 9-10) for binding to biotin coated microbeads (column 3, lines 11-15). Bohnenkamp further teaches a light emitting element (light source, column 3, lines 49-50), a first light connecting element (optical wedge in direct contact to the capillary (column 2, lines 3-5), a second light connecting element (optical grids (column 3, lines 65-66), light detecting element (CCDs, column 3, line 67), fluid dispensing element (3, fig. 1), which would dispense sample to the measuring cell itself (1, fig.1), wherein light is transmitted to the capillary by the wedge (column 3, lines 48-51), and to the CCD via the optical grid (column 3, lines 65-67). Bohnenkamp further discloses that this device would be capable of studying antigen and antibody reactions (column 3, lines 9-20).

25. With respect to claims 14, 15, the light source may be a lasers or a flash-lamp (column 2, lines 25-29), which could be considered an array of a single laser.

26. With respect to claims 16, 17, the detecting element may be a photomultiplier or a CCD array (column 2, lines 28-30).

27. With respect to claim 18, Bohnenkamp also teaches the use of optical filters as a second connecting element (column 3, lines 60-65).

28. With respect to claim 21, the fluid dispensing element (3, fig. 1), would be capable of dispensing sample to and from the measuring cell itself (1, fig.1

29. With respect to claim 24, the sample may be a dissolved solution (column 2, lines 65-67).

30. With respect to claims 25, 26, the light guiding device is a capillary (column 2, lines 50-55) and would therefore be capable of capillary action. Furthermore, the flow in the capillary is also capable of being regulated by gravity. Therefore, the light guiding device of Bohnenkamp would anticipated this claim.

31. With respect to claim 27, the capillary is designed such that light is guided through and transmitted through the end of the capillary (fig. 1, column 3, lines 49-60).

32. With respect to claim 28, Bohnenkamp teaches an aviding coated capillaries (column 3, lines 9-10).

33. With respect to claim 30, analytes are fixed on the inner surface of the capillary (column 1, lines 49-55).

34. With respect to claim 32, Bohnenkamp teaches that the excess of binding areas is covered with inert protein (to prevent nonspecific binding, column 3, lines 15-20).

35. With respect to claim 33, Bohnenkamp teaches fluorescent dyes bound to biotinylated microbeads that bind to the avidin coating (column 3, lines 9-20), which would result in fluorescent light exiting the light guiding capillary (column 3, lines 60-65).

36. With respect to claim 55, the capillary is designed such that light is guided through and transmitted through the end of the capillary (fig. 1, column 3, lines 49-60), and would therefore comprise a material capable of guiding light within the fluid contained the tube.

37. With respect to claims 56, 57, 60, Bohnenkamp teaches fluorescent dyes bound to biotinylated microbeads that bind to the avidin coating (column 3, lines 9-20), which would result in fluorescent light exiting the light guiding capillary (column 3, lines 60-65). This layer would therefore constitute the organic coating.

38. With respect to claim 58, the sample would be capable of entering through one end of the tube and exiting through the other end of the tube.

39. Claims 1, 2, 5-10, 12-15, 20, 21, 24, 27-31, 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Lockhart [US 6,974,673].

With respect to claim 1, Lockhart teaches a hollow optical waveguide with a first opening (142, fig. 1) and a second opening (144, fig. 1), and a first biomolecular constituent attached to the inner wall of the hollow optical waveguide (column 2, lines 31-42). A fluid containing a target substance enters the cavity of the waveguide through a port and exits through another port (column 4, lines 20-25, fig. 1). Lockhart further teaches light from a source such as a laser is introduced into the light-input ends (light connecting element) of the waveguide. The device of Lockhart would be capable of guiding light within a fluid due to the second waveguide (122, fig. 1) located within the first waveguide.

40. With respect to claim 2, a fluid containing a target substance enters the cavity of the waveguide through a port and exits through another port (column 4, lines 20-25, fig. 1), and therefore the sample is fluid.

41. With respect to claim 5, Lockhart further teaches light from a source such as a laser is introduced into the light-input ends (primary light connecting element) of the waveguide (column 4, lines 25-30), and light emanating from the light-output end (secondary light connecting element) is received by opto-electric detectors (column 4, lines 25-45), such that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56).

42. With respect to claim 6, Lockhart et al each that the first biomolecular constituent can be directly attached to the waveguide (column 9, lines 20-27), which would be an organic coating.

43. With respect to claim 7, Lockhart teaches a fiber surrounded by cladding (column 5, lines 6-25).

44. With respect to claim 8, Lockhart et al teach a hollow waveguide containing a fluid within the cavity (column 2, lines 8-10, 35-40), which would render the waveguide a fluid core waveguide.

45. With respect to claim 9, Lockhart et al each that the first biomolecular constituent can be directly attached to the waveguide (column 9, lines 20-27).

46. With respect to claim 10, Lockhart teaches that the first biomolecular constituent can be indirectly attached to the waveguide via a linker (interstitial layer) (column 9, lines 27-55).

47. With respect to claim 12, Lockhart teaches that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56).

48. With respect to claim 13, Lockhart teaches a hollow optical waveguide with a light-input end and a light-output end, and a first biomolecular constituent attached to the inner wall of the hollow optical waveguide (column 2, lines 31-42). A fluid containing a target substance enters the cavity of the waveguide through a port (first opening) and exits through another port (second opening) (column 4, lines 20-25, fig. 1). Lockhart further teaches light from a source such as a laser is introduced into the light-input ends (primary light connecting element) of the waveguide (column 4, lines 25-30), and light emanating from the light-output end (secondary light connecting element) is received by opto-electric detectors (column 4, lines 25-45), such that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56). The device of Lockhart would be capable of guiding light within a fluid due to the second waveguide (122, fig. 1) located within the first waveguide.

49. With respect to claim 14, 15, Lockhart teaches light from a source such as a laser (column 4, lines 25-30), which could be considered an array of a single laser.

50. With respect to claim 18, Lockhart further teaches light-input ends (primary light connecting element) (column 4, lines 25-30), and light-output ends (secondary light connecting

element) (column 4, lines 25-45). The light-input end and the light-output end could therefore be considered to be optical windows.

51. With respect to claim 19, the ports through which fluid enters are located along the same fiber as the light-input ends and light output ends (fig. 1).

52. With respect to claim 20, Lockhart further teaches light from a source such as a laser is introduced into the light-input ends (primary light connecting element) of the waveguide (column 4, lines 25-30), and light emanating from the light-output end (secondary light connecting element) is received by opto-electric detectors (column 4, lines 25-45).

53. With respect to claim 21, fluid containing a target substance enters the cavity of the waveguide through a port and exits through another port (fluid dispensing element) (column 4, lines 20-25, fig. 1).

54. With respect to claim 22, Lockhart further teaches a sample container (column 7, lines 55-58).

55. With respect to claim 24, a fluid containing a target substance enters the cavity of the waveguide (column 4, lines 20-25, fig. 1), and therefore the sample would be liquid.

56. With respect to claim 27, Lockhart further teaches light from a source such as a laser is introduced into the light-input ends (primary light connecting element) of the waveguide (column 4, lines 25-30), and light emanating from the light-output end (secondary light connecting element) is received by opto-electric detectors (column 4, lines 25-45), such that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56).

57. With respect to claim 28, Lockhart et al each that the first biomolecular constituent can be directly attached to the waveguide (column 9, lines 20-27), which would be an organic coating.

58. With respect to claim 29, Lockhart et al teach a hollow waveguide containing a fluid within the cavity (column 2, lines 8-10, 35-40), which would render the waveguide a fluid core waveguide.

59. With respect to claim 30, Lockhart et al each that the first biomolecular constituent can be directly attached to the waveguide (column 9, lines 20-27).

60. With respect to claim 31, Lockhart teaches that the first biomolecular constituent can be indirectly attached to the waveguide via a linker (interstitial layer) (column 9, lines 27-55).

61. With respect to claim 33, Lockhart teaches that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56).

62. With respect to claim 55, 56, 59, 60, Lockhart teaches a fiber surrounded by cladding (column 5, lines 6-25), which would be capable of guiding the light.

63. With respect to claims 57, 58, Lockhart et al. teach a first biomolecular constituent attached to the inner wall (optical coating) of the hollow optical waveguide (column 2, lines 31-42) such that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56).

64. Claims 3, 4, 25, 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Lockhart [US 6,974,673] in light of Kumar et al [US 5,624,850].

With respect to claims 3, 4, 25, 26, Lockhart teaches a hollow waveguide that is a glass capillary. Although Lockhart does not teach that the capillary is capable of capillary action, one of ordinary skill would know that capillary fibers are capable of capillary action, as evidenced by Kumar et al, who teach that the samples may be taken up in a capillary via capillary force (column 8, lines 45-56). It should also be noted that claims 3-4, 25, 26, refer to an intended use of the capillary. Since the capillary of Lockhart is capable of capillary action, it meets the claim.

Claim Rejections - 35 USC § 103

65. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

66. Claims 11, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lockhart [US 6,974,673] in view of Kumar et al [US 5,624,850].

With respect to claims, 11, 32, Lockhart teaches a hollow optical waveguide with a light-input end and a light-output end, and a first biomolecular constituent attached to the inner wall of the hollow optical waveguide (column 2, lines 31-42). A fluid containing a target substance enters the cavity of the waveguide through a port and exits through another port (column 4, lines 20-25, fig. 1). Lockhart further teaches light from a source such as a laser is introduced into the light-input ends (primary light connecting element) of the waveguide (column 4, lines 25-30),

and light emanating from the light-output end (secondary light connecting element) is received by opto-electric detectors (column 4, lines 25-45), such that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56). Lockhart does not teach coating the waveguide with an additional layer that prevents or retards non-specific adsorption or binding of the target and/or other components of the sample.

Kumar et al, however, do teach coating the capillary surface with a blocking solution to prevent non-specific adsorption (column 5, lines 24-40). Kumar et al further teach that non-specific adsorption as it may result in nonspecific binding of the label to the surface (column 5, lines 24-35), which would increase background noise.

Therefore, it would have been obvious to one of ordinary skill in the art to coat the capillary surface of Lockhart with a blocking solution to prevent non-specific adsorption, as suggested by Kumar et al, in order to prevent nonspecific binding of the label to the surface, which would increase background noise.

67. Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lockhart [US 6,974,673] in view of Aker et al [US 6,558,626].

With respect to claims 16-17, Lockhart teaches that light emanating from the light-output end (secondary light connecting element) is received by an array of opto-electric detectors (column 4, lines 25-45), such that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide

(column 4, lines 40-56). Lockhart fails to teach that the opto-electric detectors can be photomultiplier tubes, cameras, or photodiodes.

Aker et al, however, do teach the use of detectors such as photomultiplier tubes (column 17, lines 16-23), and further teach that detectors such as photomultiplier tubes are sensitive and have a wide dynamic range (column 17, lines 23-31).

Therefore, it would have been obvious to one of ordinary skill in the art for the opto-electric detectors of Lockhart to be photomultiplier tubes, as suggested by Aker et al, in order to have detectors that are sensitive and that have a wide dynamic range.

68. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lockhart [US 6,974,673] in view of Saaski et al [US 6,484,594].

With respect to claim 23, Lockhart teaches a hollow optical waveguide with a light-input end and a light-output end, and a first biomolecular constituent attached to the inner wall of the hollow optical waveguide (column 2, lines 31-42). A fluid containing a target substance enters the cavity of the waveguide through a port and exits through another port (column 4, lines 20-25, fig. 1). Lockhart further teaches light from a source such as a laser is introduced into the light-input ends (primary light connecting element) of the waveguide (column 4, lines 25-30), and light emanating from the light-output end (secondary light connecting element) is received by opto-electric detectors (column 4, lines 25-45), such that if biomolecular constituents in fluid delivered to the waveguide (fluid dispensing element) (column 4, lines 20-25) bind to the constituents on the surface of the waveguide, a change occurs in the light propagating through the waveguide (column 4, lines 40-56). Lockhart fails to teach a disposal reservoir.

Saaski et al, however, do teach the use of a waste container (column 30, lines 40-45). Saaski et al further teach that clearing of any old, historical target material is important in any situation where it is desired that the detection apparatus detect target material that is currently entering the invention, rather than target material that has entered it in the past (column 30, lines 43-65).

Therefore, it would have been obvious to one of ordinary skill in the art to have a waste container (disposal reservoir) in the invention of Lockhart and that the fluid exiting the waveguide of Lockhart go to a waste container rather than be recirculated, as suggested by Saaski et al, in order to clear the waveguide of old, historical target material, such that the detection apparatus detects target material currently entering the waveguide rather than target material that has entered it in the past.

69. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohnenkamp [US 6,252,657] in view of Saaski et al [US 6,484,594].

70. With respect to claim 23, Bohnenkamp teaches a light guiding device such as a capillary (column 2, lines 50-55) wherein analytes are fixed on the inner surface of the capillary (column 1, lines 49-55), such as avidin (column 3, lines 9-10) for binding to biotin coated microbeads (column 3, lines 11-15). Bohnenkamp further teaches a light emitting element (light source, column 3, lines 49-50), a first light connecting element (optical wedge in direct contact to the capillary (column 2, lines 3-5), a second light connecting element (optical grids (column 3, lines 65-66), light detecting element (CCDs, column 3, line 67), fluid dispensing element (3, fig. 1), which would dispense sample to the measuring cell itself (1, fig.1), wherein light is transmitted

to the capillary by the wedge (column 3, lines 48-51), and to the CCD via the optical grid (column 3, lines 65-67). Bohnenkamp further discloses that this device would be capable of studying antigen and antibody reactions (column 3, lines 9-20). Bohnenkamp fails to teach a disposal reservoir.

Saaski et al, however, do teach the use of a waste container (column 30, lines 40-45). Saaski et al further teach that clearing of any old, historical target material is important in any situation where it is desired that the detection apparatus detect target material that is currently entering the invention, rather than target material that has entered it in the past (column 30, lines 43-65).

Therefore, it would have been obvious to one of ordinary skill in the art to have a waste container (disposal reservoir) in the invention of Bohnenkamp and that the fluid exiting the waveguide of Bohnenkamp go to a waste container rather than be recirculated, as suggested by Saaski et al, in order to clear the waveguide of old, historical target material, such that the detection apparatus detects target material currently entering the waveguide rather than target material that has entered it in the past.

Response to Arguments

71. Applicant's arguments filed July 17, 2006 have been fully considered but they are not persuasive. More specifically with respect to applicant's argument that Lockhart does not teach or suggest that the light can be guided insider of the fluid contained within the inner volume of the capillary or that light can be directed inside the fluid filling part without the use of a second waveguide, the claims merely recite that the tube is capable of guiding light within a fluid

contained therein, and do not preclude the use of a second waveguide located within the fluid. With respect to applicant's second argument that Lockhart does not suggest that the primary and secondary light connection directly bring light into and respectively collect it from the liquid collected inside of the inner volume of the waveguide without the use of evanescent waves, this is not found persuasive. In particular, applicants do not recite that the light travels through the liquid itself, and even reading the claims in light of the specification, one of ordinary skill in the art would not interpret the claims to be limited to that the primary and secondary light connection directly bring light into and respectively collect it from the liquid collected inside of the inner volume of the waveguide without the use of evanescent waves, or without the use of a second waveguide.

72. Applicant's arguments to the rejections under 103(a) have been addressed above with respect to applicant's arguments to Lockhart.

Conclusion

73. No claims are allowed.

74. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

75. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571) 272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

76. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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